

|                                  |     |           |      |      |
|----------------------------------|-----|-----------|------|------|
| RoHS Compliant<br>Pb - Lead Free | Ltr | Revisions | Date | Appr |
|                                  |     |           |      |      |
|                                  |     |           |      |      |
|                                  |     |           |      |      |

**Electrical Specifications:**

|                                      |                        |                             |          |         |
|--------------------------------------|------------------------|-----------------------------|----------|---------|
| Frequency Range                      |                        | 77.000 to 625.000           |          | MHz     |
| Frequency Stability over Temperature |                        | ±100                        |          | PPM Max |
|                                      |                        | ±50                         |          |         |
|                                      |                        | ±25                         |          |         |
| Aging per Year                       |                        | ±3                          |          |         |
| Operating Temperature Range          | Standard               | 0 to +70                    |          | °C      |
|                                      | Extended               | -40 to +85                  |          |         |
| Storage Temperature Range            |                        | -55 to +125                 |          |         |
| Supply Voltage                       |                        | 2.5 ± 5%                    | 3.3 ± 5% | Vdd     |
| Input Current                        | 77.000 to 100.000 MHz  | 60                          | 60       | mA Max  |
|                                      | 101.000 to 160.000 MHz | 65                          | 65       |         |
|                                      | 161.000 to 625.000 MHz | 100                         | 110      |         |
| Output Voltage                       | Logic High (Voh)       | 1.6                         | 1.6      | Vdd Min |
|                                      | Logic Low (Vol)        | 0.9                         | 0.9      | Vdd Max |
| Differential Output Voltage (Vod)    |                        | 247 to 454                  |          | mV      |
| Offset Voltage (Vos)                 |                        | 1.125 to 1.375              |          | V       |
| Output Symmetry                      |                        | 45 to 55                    |          | %       |
| Output Type                          |                        | LVDS - Complimentary Output |          | -       |
| Output Load (Between Q and QN)       |                        | 100                         |          | Ω       |
| Rise and Fall Time                   | 77.000 to 100.000 MHz  | 1                           | 1        | ns Max  |
|                                      | 101.000 to 160.000 MHz | 0.5                         | 0.5      |         |
|                                      | 161.000 to 625.000 MHz | 1.5                         | 1.5      |         |
| Enable-Disable Function              | Tri-State              |                             |          | -       |
|                                      | INH - Pin 1            | Q Pin 4 - QN Pin 5          |          | -       |
|                                      | High - Pin 1           | Operating                   |          | -       |
|                                      | Low - Pin 1            | High Impedance              |          | -       |
| Enable High Input Voltage            |                        | 1.75                        | 2.31     | Vdd Min |
| Enable Low Input Voltage             |                        | 0.75                        | 0.99     | Vdd Max |
| Phase Jitter (12 KHz to 20 MHz)      | 77.000 to 159.900 MHz  | 1                           |          | ps RMS  |
|                                      | 160.000 to 625.000 MHz | 4                           |          |         |

Temperature stability is Inclusive of all conditions:

Calibration Tolerance at +25°C, frequency stability over the operating temperature range, supply voltage, supply voltage change, output load changes, shock, vibration, and 1st year aging at +25°C.



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: MK

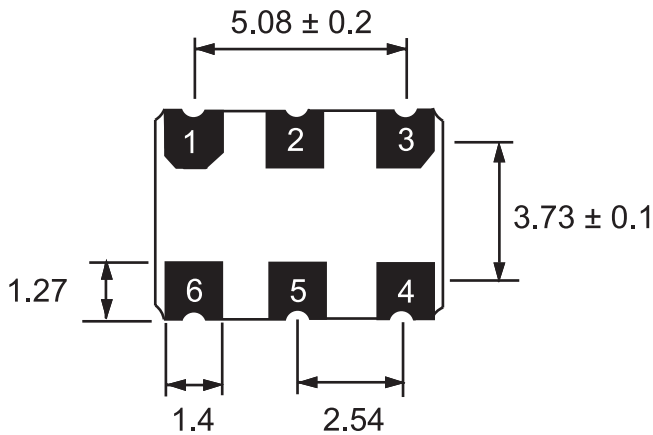
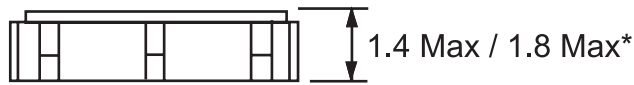
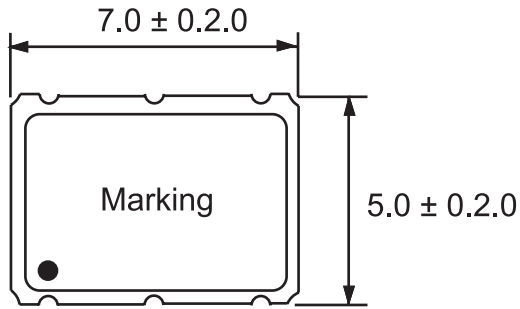
Page: 1/4 Date: Sept 6, 2007

Specification Title:

**Clock Oscillator  
LVDS - Complimentary Output  
5.0 x 7.0 mm Surface Mount - 6 Pad  
General Product Specification**

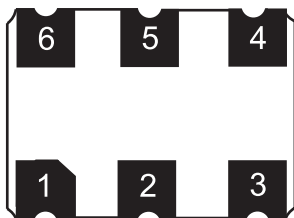
Part Number: **S7A Series**

### Mechanical Outline:



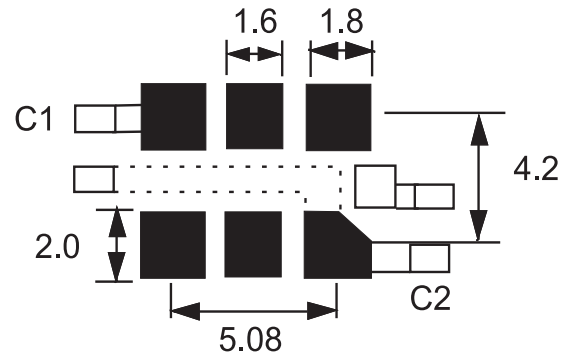
**Package is Seam Sealed Ceramic-Metal.  
Dimensions are millimeters.**

### Pad Connection:



**Top View**

### Solder Pattern:



C1: 0.01  $\mu$ F or 0.1  $\mu$ F decoupling capacitor is recommended.

C2: By-Pass capacitor for noise suppression. Contact Aker for suggested values.

\*Package Height:

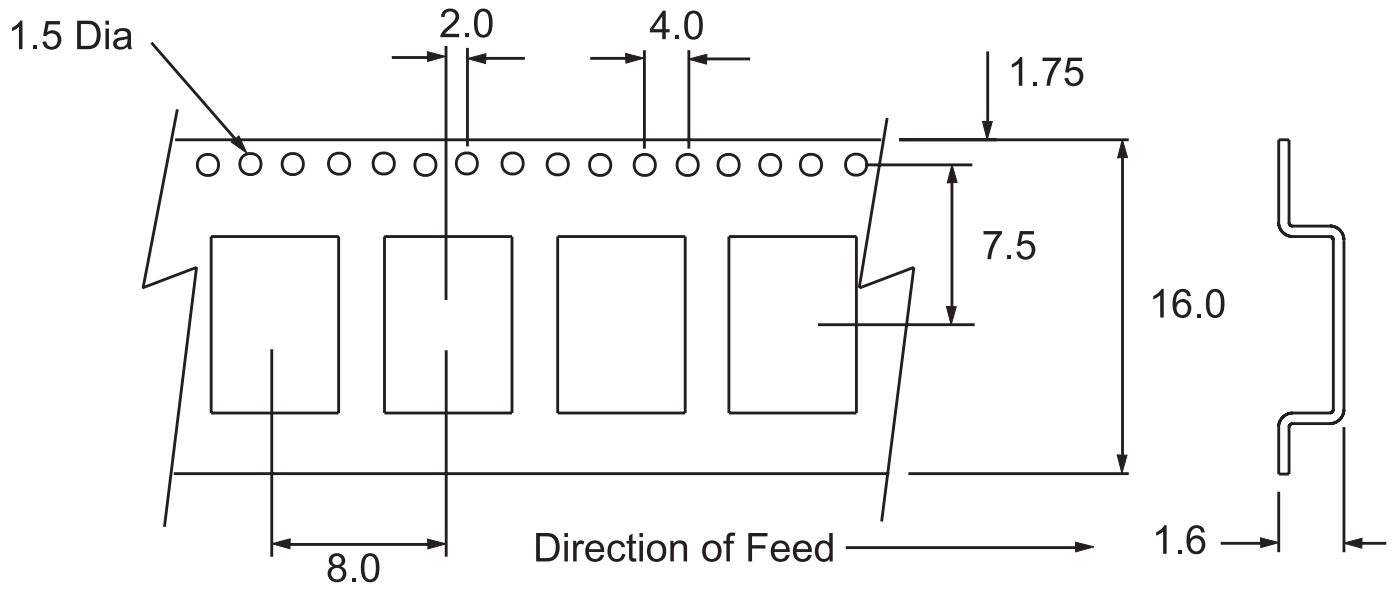
1.4 mm Max for 77 to 159.900 MHz

1.8 mm Max for 160 to 625 MHz

### Pin Connection

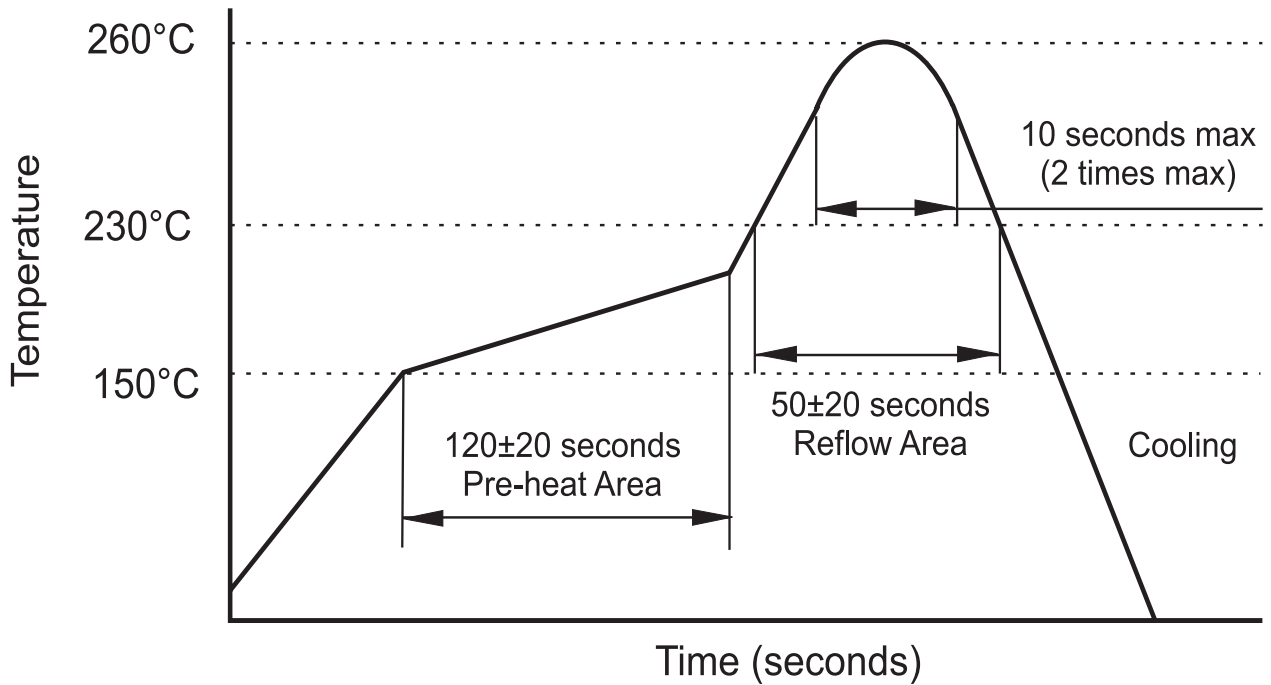
- 1- INH
- 2- NC
- 3- GND
- 4- Output - Q
- 5- Comp. Output - QN
- 6- Vdd

**Carrier Tape Dimensions:**



**Dimensions are millimeters.**

**Solder Reflow Characteristics:**



## How to build a Part Number:

|                              |                          |                             |
|------------------------------|--------------------------|-----------------------------|
| <b>Series</b>                | <b>S</b>                 | <b>Parameter</b>            |
| <b>Package</b>               | <b>7A</b>                | <b>5.0 x 7.0 mm - 6 Pad</b> |
|                              |                          |                             |
| <b>Supply Voltage</b>        | <b>25</b>                | <b>+2.5 Vdd ± 5%</b>        |
|                              | <b>33</b>                | <b>+3.3 Vdd ± 5%</b>        |
|                              |                          |                             |
| <b>Temperature Stability</b> | <b>10</b>                | <b>±100 PPM</b>             |
|                              | <b>05</b>                | <b>±50 PPM</b>              |
|                              | <b>025</b>               | <b>±25 PPM</b>              |
|                              |                          |                             |
| <b>Frequency</b>             | <b>77.000 to 625.000</b> | <b>MHz</b>                  |
|                              |                          |                             |
| <b>Output Load</b>           | <b>L</b>                 | <b>LVDS</b>                 |
|                              |                          |                             |
| <b>Temperature Range</b>     | <b>See Notes</b>         | <b>0 to +70 °C</b>          |
|                              | <b>X</b>                 | <b>-40 to +85 °C</b>        |
|                              |                          |                             |
| <b>Packaging</b>             | <b>R</b>                 | <b>Tape and Reel</b>        |

### Part Number Example:

**S7A3305-155.520-L-X-R**

**S7A: 5.0 x 7.0 mm SMD Package - 6 Pad**

**33: +3.3 Vdd Supply Voltage**

**05: ±50 PPM Temperature Stability**

**155.520 MHz Nominal Frequency**

**L: LVDS Output**

**X: -40 to + 85° C Extended Temperature Range**

**R: Tape and Reel Packaging**

### Notes:

- 1- Standard Temperature Range does not need to be included in Part Number description.
- 2- Product is shipped in Tape and Reel configuration. Each reel contains 1000 pieces.
- 3- Quantities less than 1000 are shipped bulk in ESD pouches.
- 4- Specification subject to change without notice.